# SURVEY OF ATTITUDES ON DRINKING AND DRIVING

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by

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# ABSTRACT

Recent literature on drinking and driving is reviewed with special emphasis on reasons why the practice is at such a high level, the lack of awareness of the effects of alcohol, the ineffectiveness of legal deterrents and the absence of social sanctions. A questionnaire was designed to assess people's opinions on a wide range of statements dealing with drinking and driving. A pilot study of 20 subjects was carried out to test the questionnaire. The final questionnaire consisted of 30 statements and subjects had to indicate their degree of agreement with the statement on a 9-point Likert scale. There were 100 subjects in the study. SPSS frequency and crosstabulation programmes were used to analyze the results.

It is felt that the drinking driver is not a social drinker, but one who needs professional help. Responsibility lies with the driver and society. Although respondents agree with increasing some legal penalties and the severity of legislation they feel that the problem will not be resolved without changing society's acceptance of the practice.

# INTRODUCTION

Although there has been a lot of publicity about the dangers and consequences of drinking and driving it is still a common practice. Many reasons for this have been forwarded, including the small proportion of offenders actually caught, the lack of social sanctions against drinking and driving, ineffective legal penalties, and finally the attitude of society towards the problem.

This thesis was designed to assess people's attitudes towards the problem and to see in what areas they were willing to accept deterrents and their general knowledge about the problem.

Following is a review of the relevant literature on the extent of the problem, the effectiveness of present countermeasures, and people's attitudes towards drinking and driving.

# LITERATURE SURVEY

## Extent of Drinking and Driving

There is little reliable information on the incidence of drinking and driving or the degree of involvement of alcohol in traffic accidents in New Zealand or elsewhere. Information of the extent can be inferred from two sources; the percentage of drivers breath tested and the blood alcohol levels of drivers admitted to hospitals. The research in various hospitals on the blood-alcohol level of injured drivers is not directly comparable because of different categories used - some hospitals recorded the percentage of drivers with alcohol present in their blood, other studies concerned themselves with the number over a certain level. There is also a variation in the time after an accident that the sampling occurs; some studies have only been concerned with the number who died within 12 hours of admission and blood samples were obtained when they had died. Overall the studies do give an indication of the degree of alcohol involvement in road accidents.

As can be seen from Tables I and II, the percentage of drivers with alcohol present in their blood varies from study to study, from 12.5% (Robertson 1966) to 64.4% (Friemuth 1968). If only single vehicle crashes are considered the percentage is even higher; 83% (Birrell 1965), 70.8% (McCarroll 1961), 73.5% (Hadden 1959). Similarly, if only those drivers considered responsible for accidents are considered, the percentage is even higher still (Whitlock et al. 1971). Most of the later studies have classified drivers according to their blood alcohol level; those above 100 mg/100 ml varied from 34% (Jamieson and Tait 1968) to 55% (Scott, 1968). Non-fatally injured

TABLE I: Fatally Injured Drivers and their Blood-Alcohol Levels.

| | | | | mg/100 ml. | | |
|---|---|---|---|---|---|---|
| Author | Year | Country | % with alcohol detected | 50 | 80 | 100 |
| Pearson | 1957 | Aust. | | | | 39.4% |
| Freimuth (1) | 1958 | USA | 64.4% | | | |
| Hadden (1) | 1959 | USA | 73.5% | | | |
| McCarroll (1) | 1961 | USA | 70.8% | | | |
| New Jersey Study (1) | 1964 | USA | 57.0% | | | |
| Birrell (1) | 1965 | Aust. | 83.0% | | | |
| Neilson (1) | 1965 | USA | 55.0% | | | |
| Older & Sims | 1966 | UK | | | 27% | |
| Birrell (+)(2) | 1967 | Aust. | | | | 60% |
| Jamieson & Tait | 1968 | Aust. | | | | 34% |
| Scott | 1968 | NZ | | | | 55% |
| Kreml | 1971 | USA | | | | 50% |
| Whitlock | 1971 | Aust. | 63% had been drinking | | | |
| Tonge et al. | 1972 | Aust. | | | | 45.7% |
| Drinking Drivers and the Law | 1974 | UK | | | | 35% |
| Hossack & Brown | 1974 | Aust. | | | | 37.4% |
| Pieterese | 1975 | S. Africa | | | 58.2% | |
| Hooper | 1976 | Aust. | | | | 53% |
| Gwynne | 1977 | NZ | | | | 55% |

(1) From Little, A.D. The State of the Art of Traffic Safety.

(+) Single Vehicle Accidents.

(2) From Whitlock, F.A. Death on the Road.

TABLE II: Blood-Alcohol Levels of Injured Drivers

| | | | | mg/100 ml | | |
|---|---|---|---|---|---|---|
| Author | Year | Country | % with alcohol detected | 50 | 80 | 100 |
| Robertson (2) | 1966 | Aust. | 12.5% | | | |
| Jamieson | 1968 | Aust. | | 40% | | |
| Tennet | 1969 | NZ | 28% | | | |
| Fairgray | 1973 | NZ | | | | 21% |
| Hart et al. | 1975 | NZ | | | | 40% |
| Hooper | 1976 | Aust. | | | | 29% |
| Ryan & Salter | 1977 | Aust. | 25% | | | |
| Storie | 1977 | UK | 28% consumed alcohol within 12 hours prior to accident. | | | |

(2) From Whitlock, F.A., Death on the Road.

drivers (Table II) tend to have lower average blood-alcohol levels than fatally injured drivers (Table I). One could conclude from the hospital figures that between 40% to 63% of accidents resulting in hospital admission have got an alcohol factor.

Official figures in New Zealand estimate that alcohol caused accidents account for 21% of all accidents and 40% of fatal ones (Motor Accidents in 1976). An estimate from New Zealand DSIR figures is that 31%-61% of accidents involve alcohol (Bailey 1974). A study of all accidents that occurred in an area of England over a four year period found human error to contribute to nearly 95% of accidents and the presence of alcohol to be the largest single impairment factor in drivers who had been at fault in 8% of all cases alcohol consumption was a contributory factor. Twenty-eight percent of all car drivers had consumed alcohol in the twelve hours prior to the accident (Storie 1977).

Alcohol plays a part in a great percentage of accidents, especially serious ones and driver caused accidents. But this is only part of the drinking and driving problem. The number of drinking drivers who are not involved in accidents is considerably larger than those who are involved.

Of the 14,953 drivers who were breath-tested in New Zealand in 1977, 61% had blood alcohol levels over 100 mg/100 ml. In 1976 only 26.5% of the drivers who were breath-tested were done so because of involvement in accidents. But these figures only indicate the number of drivers who were apprehended.

Several surveys have tried to estimate the amount of drinking and driving in New Zealand - one survey found that 39% of 15-24 year olds admitted to driving after drinking twice a week (Heylen Research Centre 1976). In an earlier survey 25% of respondents admitted to driving

after drinking too much; 56% said that they had friends who drink and drive, and 91% felt that driving after drinking too much was common in the community (Parsons 1975). A home interview survey in 1974 found that 38% of those who drank away from home exceeded the legal limit when they drove home; an estimated 26,000 trips per week were taken by those exceeding the present legal limit. A further 14,800 drove home with a level between 80 mg and 99 mg/100 ml (Sanderson 1974). McCreary studied drinking patterns in Wellington and found that the heavier drinkers tended to drink away from home (McCreary 1973).

Williams (1968) obtained breath tests from 51% of people leaving public and private drinking settings - 63.33% of those tested had a blood alcohol level of more than 50 mg/100 ml and 25% had a level of more than 100 mg/100 ml. Roadside testing in Ontario, Canada, found alcohol present in 27.3% of the cases, 6.4% of more than 80 mg/100 ml. Obviously the number of drinking drivers who are either involved in road accidents or who are required to take breath tests is only a small proportion of those who drink and drive. It is this small proportion who have been studied to see if the drinking driver has any distinctive characteristics.

## The Drinking Driver

Hurst (1977) divided drinking drivers into three groups.

1. The problem drinkers who drink too much whatever they are doing and who also happen to be drivers.
2. Social drinkers who occasionally drink too much before driving.
3. Young (or inexperienced) drivers who do not necessarily drive

at high blood alcohol levels but who have low impairment thresholds. There are also two smaller groups; inexperienced drivers badly impaired at the 50 mg to 100 mg/100 ml level and sociopathic types who are bad drivers.

One of the problems with the acceptance of any new legislation or attempts to introduce some kind of control on drinking and driving, is the widespread belief that the drinking driver is from group two - the social drinker who was unlucky to get caught. There is also the idea that people react differently to alcohol and it is not fair to punish a man who is little affected by a dose of alcohol which would seriously impair others (Elliott and Street 1968). But it is not only the social drinker who is being involved in serious accidents and being asked to take breath-tests, as is evinced by the high blood alcohol levels of drivers admitted to hospital. The view that the drinking driver is no different from the rest of the population is mirrored in the present legislation. The problem of drinking and driving is considered to be a legal one and not a social one. The studies of people arrested for drinking and driving suggest that the drinking driver is not simply a person who had one too many at the party.

Whitlock interviewed families of fatally injured drivers and many commented that the deceased had been lucky not to have had an accident or conviction for drinking and driving before (Whitlock et al. 1971). As noted above, the blood alcohol level of the drinking drivers is higher than that expected from normal social drinking; 50% were above 150 mg/100 ml in one study (Raymond 1967), 24% in another (Sabey 1978). The high levels indicate possible alcohol problems; in an alcoholic treatment programme it was found that previous convictions for drinking and driving were frequent (Poynter and Anderson 1976).

Waller (1968) concluded that the alcoholic plays a substantial role in 41-62% of drinking accidents. He estimated that the alcoholic drivers represented 6.5% of the drivers in California and that 10.8% of accidents may involve identifiable drinking by alcoholics. Gabrynowicz (1977) found that 53% of his drinking drivers were alcoholics. He used the following psychometric tests to determine whether a driver was alcoholic or not - the Cage test, MAST, Alcadd and Modified Pattison Rating Scale. Selzer and Weiss (1966) classified a driver as alcoholic or not after interviewing friends and relatives. Of the 40% of alcoholic drivers in Selzer and Weiss' (1966) study, 45% had had at least one prior arrest for drinking and driving or for being drunk and disorderly. Of the 705 drivers who had blood samples sent to the Auckland DSIR, 102 repeated the offence within a five year period (Stanley 1977).

The previous arrests of drinking drivers are not always for offences involving alcohol. Out of a sample of 49, there were 56 previous convictions for drinking and driving, 17 criminal and 16 motor charges (Grimmond 1971). Another study of 476 drinking drivers found that 37% had a criminal record and only 28% had had no previous criminal or traffic convictions (Raymond 1967). Previous traffic charges are frequent (Raymond 1967, Waller 1967, Whitlock et al. 1971). Willett studied drivers after sentence and found that 26% of drinking drivers had been reconvicted on various charges since their drinking and driving charge (Willett 1973).

The drinking driver tends to be disproportionately represented in disadvantaged groups, having either a semi-skilled or unskilled job; he is unmarried - especially separated or divorced, and comes from a minority group such as the Spanish Americans in Hyman's study, or a

disadvantaged group such as the Negroes in South Africa (Hyman 1968, Erlank 1971, Allsop 1966).

Age-wise the drinking driver falls into two groups; the young male under 25 years and an older group. The young driver is caught at a low blood alcohol level, because of his inexperience with both drinking and driving. However the level at which younger drivers are apprehended is increasing at a greater rate than that of older drivers (Annual TRRL Report 1974). These inexperienced drivers are risk factors in all accidents, not just alcohol involved ones (A Modern Epidemic (1) 1978).

The second group is that of older drivers who are able to cope with alcohol and driving at the lower blood-alcohol levels where they remain undetected, but at higher levels he is unable to escape the detection and is caught (Grimmond 1971, Allsop 1966, Hyman 1968, Scott and Bailey 1974, Older and Sims 1966, Parsons 1978, Whitlock 1971, Raymond 1972).

The drinking driver is not a representative of the general population, but he is involved in a sizeable proportion of accidents, especially fatal ones. Recorded blood-alcohol levels are higher than those expected from social drinking and the level is usually well over the legal limit. Frequently the drinking driver has a criminal and traffic record and comes disproportionately from the disadvantaged groups of a society. The emphasis on the occurrence of alcoholics in the studies should not be dismissed lightly as the implication for the effectiveness of deterrents is considerable. But the drinking social driver who is not caught also needs to be considered; this person may be more affected by increasing penalties and by anti-drinking and driving campaigns.

Consequences of Drinking and Driving

The vast majority of drivers drink socially and with a low likelihood of apprehension; there is little fear of the consequences of drinking and driving (Little 1970, Henderson 1972). The social consequences of traffic offences are insignificant and a large number of people are merely annoyed or indifferent to their convictions which do not affect them (Willet 1973, Oliver 1975). The lack of public condemnation of drinking and driving is due to many reasons.

There is a division between motoring offences which are of no social consequence and criminal offences which have more severe social consequences. Fitzgerald (1966) feels that this attitude 'stems from a refusal to see anything immoral in offences of negligence or in violations of regulations which seem arbitrary'. The question of intent, wilfulness and responsibility enter into the problem; the drinking driver's major offence is his intoxication and not his driving, also of course it is easier for most people to put themselves in the situation of having committed a motoring rather than a criminal offence. Even the magistrates find it difficult to decide; one magistrate is quoted in respect to a distinction between motoring and criminal offences, 'my head says yes but my heart says no' (Hood 1972, p. 103). Hood (1972) in his study of the sentencing of motoring offenders found that the motorist in the UK often receives higher fines for offences such as careless driving than the person convicted of theft or larceny. This ties in with the magistrate's view on the severity of various offences. Drunken driving ranked fourth below robbery with violence, grievous bodily harm, indecent assault on a female under sixteen. It, and dangerous driving, were considered more serious than common assault and housebreaking offences.

Surveys on the public on how serious they view drinking and driving show that when it is ranked with other traffic offences it comes out as the most serious (Fox 1965, Hogg 1977). In an Australian survey 42% of males and 34% of females considered drinking and driving the most serious driving offence (Henderson 1972). A New Zealand study found people ranked it below child molesting, but above assault, theft and accidental killing (Traffic Res. Circ. 1974).

Although drinking and driving is considered to be a serious offence it is not necessarily considered to be an anti-social offence, and this, along with identification with the drinking driver and the extent of the habit in the community, results in a large degree of acceptance of drinking and driving in the community.

Pliner and Cappell (1977) asked students to attribute responsibility in hypothetical accident situations. Responsibility was affected by the degree of intoxication and financial severity of the accident but not by the severity of the accident itself. If there was any justification for the accident - the weather for example - then there was a tendency towards leniency. Subjects who drank and drove themselves tended to be more lenient on the fines but showed no difference from non-drinking drivers on the attribution of responsibility.

## Knowledge of Drinking and Driving

While most people believe that alcohol affects the drivers' ability (Annual TRRL Report 1974) there is a prevailing view that it affects people differently and that one drink does not affect driving ability; this view is more prevalent amongst drinking drivers (Sheppard 1967, Elliott and Street 1968). It is not known how alcohol affects individuals

except that it is not a uniform effect, but any amount of alcohol will decrease the drivers' driving ability.

When asked to consider the three most important factors in accidents in surveys in Australia, less than half included alcohol (Hooper 1976, Henderson 1972). A recent study in the UK asked respondents to estimate the proportion of accidents caused by people drinking alcohol; 22% estimated that more than half were caused by alcohol, 43% estimated that quarter to half were caused by alcohol. Official figures in New Zealand attribute 20.8% of accidents to alcohol impairment (Motor Accidents in NZ 1976). There may be a tendency on the part of people to overestimate the role alcohol plays in accidents; this is possibly due to the official figures including all accidents, even the very minor, reported ones.

Although there is an awareness of the size of the problem of drinking and driving the knowledge of the law has been found to be vague, knowledge of penalties rare with a tendency to underestimate them (Hogg 1977, Sheppard 1967, Parsons 1975, Freeland 1976). Less than 50% in surveys know the legal limit and the amount of alcohol necessary to attain the legal limit was rarely known (Traffic Res. Circ. (10) 1974, Parsons 1975, Henderson 1972, Freedman 1975, Freeland 1978, Road Safety Council of South Aust. 1974).

Attempts to make the public more aware of the dangers of drinking and driving and to educate them have been largely unsuccessful. The Ministry of Transport in NZ carries out periodic blitzes against drinking and driving. The long-term effectiveness of such campaigns are doubtful; they are initially effective but only in the short-term (Parsons 1975, Henderson 1972, Traffic Res. Circ. (10) 1974, Sheppard 1967, Sabey and Inst 1976, Hurst 1973, Toss 1975, Drinking

Drivers and the Law 1976). Drivers already know the risks of drinking and driving and the campaigns are ineffective because they don't strike home at the time when it matters and the real drunks and alcoholics are unaffected (Havard 1978).

Importance of Attitudes for Effective Legislation

Wilde looked at the general ineffectiveness of most road-safety campaigns from a social psychological viewpoint and he felt that for a campaign to be effective it should include the following three factors. The message should reach the driver in the situations where he is most likely to drink and drive, for example, at the hotel. Second the driver should perceive the message as being directed at him. The third factor is that the commitment should be as public as possible - for instance, crash helmets are worn by a greater percentage of motor-cyclists than seat belts are by car occupants because of the public commitment. This commitment, however, is not easily applicable to drinking and driving.

Other suggestions for more effective campaigns are concrete facts given and the impression of being preached at should not come over as it tends to with slogans such as 'don't drink and drive'. This immediately bans any alcohol consumption and puts all drinkers in the same group. The behaviour desired should be indicated and the advertisements should be aimed at a target group; for example, the use of appropriately aimed advertisements on TV programmes viewed by certain age groups. The pre-driving group should also be considered as a target group. Although attitudes can lead to a change in behaviour (and vice-versa over a period of time) attitudes and behaviour are not the same thing so both have to be approached. The attitudes through

campaigns to change the public view on the seriousness of committing the offence and through legislation to alter the behaviour of drinking drivers and to make the consequences of drinking and driving worth consideration.

The legal blood-alcohol limit above which it is illegal to drive varies from country to country as outlined in the table below.

Table III: Legal BAL in various countries

| Legal Limit | Countries |
|---|---|
| 50 mg/100 ml | Finland, Norway, Sweden, Yugoslavia, Poland, Netherlands, Iceland, Greece |
| 80 mg/100 ml | Belgium, West Germany, Austria, Switzerland, UK, France, South Africa, Canada |
| 100 mg/100 ml | Denmark |
| 125 mg/100 ml | Eire |

Some countries have different penalties depending on the blood-alcohol level at which the driver was apprehended. In Norway imprisonment at 80 mg is mandatory; in Sweden over 150 mg results in licence withdrawal. In Belgium the driver's car may be immobilised at 80 mg/100 ml; conviction is likely at 150 mg. In France the legal limit is 80 mg and a ten day to one month prison sentence and fine is imposed. (Ward 1972, Havard 1975, Erlank 1971, Parsons 1975, Little 1970, Ladd 1972, Henderson 1972, Modern Epidemic 2 1978, Norwegen: die Knatschlange 1976).

The importance of social attitudes in the control of drinking and driving can be illustrated by comparing several European countries:

in Norway where disapproval is high, arrests for drunkeness and drinking and driving run at a much higher level than in France where there is greater tolerance and higher alcohol consumption (Whitlock 1971, Borkenstein 1976). Belgium and Holland have similar traffic accident rates, economic structure (except for the importance of the brewing industry in Belgium) and are geographically close, but in Belgium court conviction is rare below 150 mg/100 ml whereas in Holland convictions with a high likelihood of imprisonment occurs at 80 mg/100 ml (Henderson 1972). Obviously the effectiveness of legislation is going to depend on several factors including social attitudes.

## The Law and its Effectiveness

The best example of the initial effectiveness of legislation is the British legislation of 1967. In 1967 an Act was introduced permitting blood and breath-testing of suspected drinking drivers. The introduction of the Act, with its attendant publicity, resulted in a dramatic reduction in the percentage of fatally injured drivers with a blood alcohol level above 80 mg/100 ml from 25% to 15% (Annual TRRL Report 1974). But this effect was not lasting and by 1971 it had reached 26% and by 1974 35% (Drinking Driver and the Law 1976). In New Zealand the effect of legislation was less marked; the decrease in road fatalities and injuries was at a lower level than in Canada and Britain (Hurst 1977). This effect also decreased with time. Studies in England found that drinking levels have increased and the situation with drivers over 30 is worse than prior to the Act; older drivers are still more affected by the law.

The decrease in the effectiveness of the law is related to the fact that many people do drink and drive with no repercussions (Henderson

1972), the legal loopholes in Britain made a mockery of the penalties (Elliott and Street 1968), and in New Zealand as elsewhere, the penalties for drinking and driving were not aimed at the cause of the problem. The number of drivers who repeat the offence (Stanley 1977) indicates that the present legislation and ensuing penalties are not effective in deterring the offender from drinking and driving again.

Punishments Common for Drinking and Driving

The emphasis on attempts to discourage drinking and driving is punitive - fines, disqualification, imprisonment, with an increasing trend in New Zealand towards periodic detention and community work. It is treated as a legal problem and each of the legal solutions has its advantages and disadvantages.

Imprisonment

In 1976, 16.35% (67% on periodic detention) of drinking drivers appearing before the court were given prison sentences (Breath Tests in NZ 1977). Prison sentences are usually for repeated offences, death or injury accidents, and high blood-alcohol levels. The most common length is less than three months. Sixty-five percent in 1977, excluding the legal number on periodic detention were given sentences of three months or less (Hurst 1977, Breath Tests in NZ 1977).

Jail terms are, however, inconvenient to the offender's family and costly to the country. It also is not an effective deterrent - in areas in West Germany where three-quarters of the offenders received jail sentences, there was a slightly higher incidence of repeated offenders (8.9%) than in areas where one-tenth were jailed (Middendorf 1968). In Norway the mandatory thirty day sentence for driving with a blood-alcohol level of 80 mg/100 ml or higher is regarded as a gentleman's delicit. Thirty-eight percent of Norway's prisoners are drinking

drivers and there is a seven month waiting list queuing up for jail in Norway (Norwegen die Knatschlange 1976). Willet feels that the frequent use of imprisonment has led to a situation of familiarity breeding contempt.

Another problem with imprisonment is what to do with them when they are there. It is an obvious chance for re-education but it is costly. The increasing use of periodic detention has partially solved the problem of cost; the effect on the dependents is not as severe and there is a visible result of the sentence.

Disqualification

Disqualification in New Zealand for drinking and driving is almost guaranteed; 97.8% of those in court in 1977 were disqualified (Breath Tests in NZ 1977), 62% for one year or less, 32.7% for one to two years. It is considered that the most effective period is around three to six months (Willet 1973, Elliott and Street 1968); more than this period lessens the impact and encourages disobedience.

In theory, disqualification prohibits the person from driving for a period of time, at the end of which they return to driving. It sounds like a good, inexpensive way to punish the crime; it is also relevant to the crime. It does however have three major drawbacks. Firstly there is a great temptation to drive: 49% of all offenders disqualified in Willett's study admitted to driving while disqualified (Willett 1973). The temptation to drive is increased as there is little chance of being caught. Because of the number who drive while disqualified it is probably ineffective (Klein 1973, Willett 1973, Elliott and Street 1968). Secondly, other than being inconvenient for a period of time, disqualification does nothing to ensure that the driver will be a better driver. It would be more effective if the return of the licence were conditional on

attendance at a defensive driving course or installation of a locking device on the car for example (Poynter and Anderson 1976, Henderson 1973, Drinking and Driving 1976). The third problem is that the effect on disqualification on individuals varies. A person's job may depend on his or her being able to drive, and partial licences for work seems to defeat the purpose of disqualification, and the effect on the dependents varies. Some people may be able to compensate for lack of licence by using taxis, others may not be able to afford these.

Fining

Obviously for fines to be effective they must have some impact on the person being fined. With the tariff system a fine may cause considerable hardship to a person in poorer circumstances but be of no consequence to a wealthier offender. To equalise the impact of the fine there are three options; either the poorer person receives the same fine but a longer period of time in which to pay, or the fine is decreased because of circumstances (Hood 1972, Willett 1973), or thirdly, the fine is adjusted to annual income. In Sweden this method is used.

In New Zealand in 1977, 82.6% of those convicted of drinking and driving were fined: 8.9% between $80 and $100, 60.22% between $100 and $200, and 24% more than $200. One of the disadvantages of fining unlike disqualification, is that it can be viewed apart from the crime as the penalty for being caught rather than the penalty for the offence. A suggestion to increase the relevance of monetary penalties is for the offender to pay the excess insurance cost on the non-guilty party's car - if of course it was not a single vehicle accident.

All the above penalties, while designed to punish the offender for the crime he has committed, are also meant to act as deterrents. If

you consider the figures in the first chapter on the extent of drinking and driving, it is obvious that too many of the deterrents do not discourage drinking and driving. Various suggestions have been made to tackle the problem of drinking and driving. There is obviously a need to change the attitudes of convicted drinking drivers to drinking and driving. When given information on the consequences of drinking and driving and asked to consider their own reasons why they drink and drive, drinking drivers show a change in their opinion becoming more against it (Malfetti and Simon 1974). But whether this type of programme changes their behaviour in the long run is questionable. Not until educational programmes are relevant to drinking and driving, so people relate drinking to the legal limit and drinking to accidents, will they be markedly effective. Attendance at Defensive Driving Courses in New Zealand, while reducing conviction rates, does not affect accidents (Hill 1976). There needs to be a practical demonstration of the effects of drinking and driving through the use of such devices as video for the courses to be effective in discouraging drinking and driving (Sutton 1977, Scoles and Fine1977, Dept of Env. 1976). Due to the number of convicted drinking drivers who have drinking problems (see above) it could be more beneficial to tackle the drinking problem rather than the driving problem, even if they do tend to have poor driving records (Kreml 1971),; this is especially so in the case of younger drivers.

One of the greatest obstacles to the reduction of drinking and driving is the social acceptance of drinking and driving, and until it is replaced with a social stigma there will be no long term decrease (Freeland 1976, Hart 1975, Hooper 1976). The public should be educated and not preached at so that they are aware of the consequences of drinking and

driving, how much it will cost them; and not just in monetary terms. It needs to be aimed at individual groups and the individual within the group so that they realise that it is not the other person who is the culprit. Included in these groups should be those who are too young to drink and drive (Little 1971, Influencing Road Users' Behaviour 1976, Elliott and Street 1976, Wilde 1975).

Summary

The extent of undetected drinking and driving is large. Those tested are either below the legal limit or well above the legal limit. The convicted drinking drivers fall into a distinct group which is less law abiding than the average citizen. The high blood-alcohol levels at which they are convicted suggest that many have drinking problems.

A feature of drinking and driving offences, in common with other motoring offences, is the lack of consequences and hence lack of deterrence of convictions. It is a socially acceptable practice, there are many legal loopholes used and the penalties are not particularly effective.

The public show a lack of knowledge of the laws and penalties relating to drinking and driving. Campaigns devised to discourage people from drinking and driving are short-lived in their effects; their effectiveness wears off when people realise that they probably won't be caught.

There is a need to tackle both attitudes, through educational programmes and behaviour through legislation. The present legislation is legally oriented but it is becoming increasingly acknowledged that the problem is a social one.

Aims of Survey

While people may accept the traditional deterrents of fines and disqualification, their reaction to penalties which are potentially more severe is not known nor is their reaction to increasing the powers of the police to stop and test drivers in certain places. No matter how much money is spent on campaigns and devising new legislation it is the reaction of the public and drivers that is going to determine its effectiveness.

> 'It is not a problem of establishing what the law should be but of establishing how democratic communites work in the face of scientific evidence.' (Phillips 1968)

There has not been a great deal of research done on people's attitudes towards drinking and driving. Most surveys have concentrated on people's knowledge of drinking and driving, trying to assess the effectiveness of various campaigns by finding out how many people knew the legal limit before and after the campaigns, seeing how common they thought drinking and driving was in the community, and if they thought this was an acceptable practice, e.g. Sanderson (1974), Parsons (1975), Henderson (1972).

This survey was primarily aimed at assessing how people reacted to common solutions to the problem - education, breath-testing increased, increased legal penalties. There are five major areas looked into:

1. How common are 'common beliefs', e.g. does one drink affect driving ability
2. Their reaction to drinking and driving; is the actual driving offence offence considered more important than being intoxicated? Who is the drinking driver?
3. Attitudes towards traditional penalties, when and if they thought them suitable and the reaction to newer penalties?

4. Thoughts on the effectiveness of deterrents, e.g. invalid insurance policies if the dirver is drunk, paying own medical expenses if you are injured when driving over the legal blood-alcohol limit.
5. Attribution of responsibility for the problem.

It is intended to test for any associations between a person's own drinking behaviour and his view of the drinking driver; whether a person's family situation affected his views, how serious the alcohol aspect of the offence was considered to be, and the inter-relationships of some of the attitudes towards deterrents.

# METHOD

## Subjects

The subjects were chosen at random in the following way. The Lands and Survey map of Christchurch was divided into 1 km squares. Those squares which were primarily residential were numbered, starting at the top left hand corner and going across; this resulted in 99 numbered squares. The actual squares where sampling was to occur were decided by using a random number table. The choice of houses within each square was made by ruling diagonal lines from the north-east to south-west corners. Five markings evenly spaced on this line indicated the houses to be approached. The first person in the house who was spoken to and was over 15 years of age was asked to participate.

## Questionnaire

A pilot questionnaire was developed from reading New Zealand studies on attitudes towards drinking and driving - Parsons 1975, Sanderson 1975. And from overseas studies - Sheppard 1967, Henderson 1972, and general reading in the area concerning possible reasons for drinking and driving and studies on the drinking driver.

The pilot questionnaire consisted of statements to which the respondent had to indicate his degree of agreement on a 9-point Likert scale. There were some questions concerning the respondent's own behaviour. At the end of each pilot interview the respondent was asked whether there were any areas of importance which he thought the questionnaire did not cover. These suggestions and those questions which the respondent found ambiguous or difficult to understand were noted. There were several alterations to the questionnaire and both the pilot and the final questionnaires are in the Appendix.

The final questionnaire was in two parts. Part A consisted of 30 statements dealing with the effects of drinking and driving, the drinking driver, appropriate penalties for drinking and driving, and finally the responsibility for drinking and driving. Several statements fell into more than one category.

The scoring was on a 9-point scale from strongly agree (1) through neutral (5) to strongly disagree (9). The respondent had to score the appropriate number from 1 to 9. In addition to the 30 statements in the final questionnaire there were three open ended questions in Part A concerning defensive driving courses and blood-alcohol limits.

Part B replies contained details about the respondent and his recent drinking behaviour and whether the interview was without interruptions or interference.

## Procedure

An initial pilot study of twenty people was carried out to test the questionnaire's format. After some revision of the original questionnaire a survey of 100 people was carried out.

The surveying was carried out on Saturdays between 12 noon and 2 p.m. These times were chosen to ensure a more representative sample than would have been obtained by interviewing on weekdays. During the lunch hours working men and women could be interviewed; if they did not have time then they usually agreed to be interviewed that evening.

When the potential respondent was approached they were told that the interviewer was from the University of Canterbury and was doing research into people's attitudes towards drinking and driving, and

asked if they would care to participate by filling in a questionnaire which would take approximately twenty minutes to complete. If they agreed to participate it was explained that it would be confidential and would not be reported in the newspapers and it was emphasised that it was their opionions which were required and so they could not fill in the questionnaire incorrectly. It was also explained how their house was chosen for the survey.

Where possible the interviewer filled in the questionnaire in an interview situation. The respondents also had a copy of the questionnaire to enable them to re-read the statements if they needed to. However, in most cases the respondents indicated that they would prefer to fill in the questionnaire themselves. In these instances the instructions printed at the top of the questionnaire were repeated, emphasising the need to read the statements carefully because of the negative phrasing of some of these statements. After they had completed the questionnaire it was checked to see that all the scales had been filled in and the statements where misinterpretation was most likely to occur, i.e. numbers 8, 12, 16b, were checked. Only one lady partially completed the questionnaire; after one page she decided that it was too complicated for her and refused to go any further.

Refusals to participate were common; about one refusal for every two acceptances. Common reasons for refusing were: 'I'm too old - you want younger opinions', 'I don't drink so you won't want my biased viewpoint', 'I don't drive', 'I'm too busy'. If they did not drink or drive it was pointed out that their opinion was as valid as those who did drink and/or drive and that they would not be biasing their sample in any way. In the final sample 11 did not drink. If they said they were busy the interviewer suggested that she should return later in the day

# RESULTS

The data from the questionnaire were analyzed using two SPSS 7 programmes - the frequency programme which gives the frequency of responses in each category; this was run through for all 49 variables. A crosstab programme was used for certain pairs of variables. The crosstab's programme results in a number of statistical procedures being carried out on the data. The statistics primarily used in the analysis of these results are:

1. The Chi-square statistic and its significance level which is valid with samples of 100 or less. The value and its significance will indicate whether there is a systematic relationship between the two variables.

2. The Tau-B or Tau-C value (depending on whether the table has an equal number of rows and columns or not). The tau value will indicate the strength of the relationship in the Chi-square. A tau value of 0.7 is considered high, of 0.3 to 0.7 moderate, and 0.0 to 0.3 small (Weisberg and Bowen 1977).

3. The third statistic used is an information theoretic one. The uncertainty coefficient will indicate how knowledge of one variable reduces the 'uncertainty' of knowing the other variable; comparison of the two variables can be done by comparing the assymetric uncertainty coefficients. On occasions the lambda statistic, also a probability measure, may be used.

The computer programme gives results for four decimal places. Because of the size of the sample and survey error to quote figures

to such places would be false accuracy, so the figures in the Results section are usually only to two decimal places.

In the results, the degree of agreement is related to the 9-point Likert scale used as follows:

| 1 2 | 3 4 | 5 | 6 7 | 8 9 |
|---|---|---|---|---|
| strongly agree | moderately agree | neutral | moderately disagree | strongly disagree |

In some instances in discussing frequencies, references will be made to the actual number nominated by the respondent; in such cases the number will be in brackets.

If the Chi-square, tau-b or tau-c and uncertainty coefficient values are not cited in the text it means that they were not significant. But this does not justify omitting the table as the pattern of responses, although not statistically significant, is often worth commenting on.

## Sample

The sample was comparable with respect to age but not to occupation with a recent larger survey of 1,000 carried out in Wellington. (A pilot study carried out for the Alcoholic Liquor Advisory Council by the National Research Bureau.) As can be seen below the ALAC sample was younger than this sample but the ages 24 to 65 are very similar; it is also similar to the figures obtained from the 1976 New Zealand Year Book.

TABLE IV: % of Population in Age Categories.

| | | 14, 15 | 16, 17 | 18-23 | 24-29 | 30-34 | 35-44 | 45-54 | 55-65 | 66+ | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Present Survey | Male | | 1 | 11 | 6 | 3 | 6 | 6 | 7 | 5 | 45 |
| | Female | | 2 | 11 | 8 | 8 | 9 | 7 | 9 | 1 | 55 |
| | Total | | 3 | 22 | 14 | 11 | 15 | 13 | 16 | 6 | 100 |
| | Year Book | | 22.9 | | 20.7 | | 15.3 | 15.1 | 12.4 | 8.8 | 100 |
| | ALAC | 6 | 6 | 16 | 15 | 10.5 | 17 | 16 | 13.5 | 0 | 100 |

A large percentage of the female sample in this study were housewives - 54.5% of the females. This is much higher than the proportion in the ALAC sample. Below is the socio-economic division by sex. The socio-economic scale used was the Revised Elley-Irving Scale.

TABLE V: Socio-economic and Sex Table

| Socio-economic Level | 1 | 2 | 3 | 4 | 5 | 6 | Housewife | Student | Retired |
|---|---|---|---|---|---|---|---|---|---|
| Male | 6 | 10 | 6 | 11 | 5 | 1 | 0 | 3 | 3 |
| Female | 1 | 6 | 5 | 4 | 3 | 1 | 30 | 3 | 2 |
| Total | 7 | 16 | 11 | 15 | 8 | 2 | 30 | 6 | 5 |

Most of the sample lived with either their spouse or spouse and children or with parents; this accounted for 75% of the sample.

Drinking Behaviour

Seventy-one percent of the sample had drunk within the week prior to the interview, 11% did not drink at all, 9% drank infrequently - less than once a month. Most of the weekly drinkers drank either at the hotel (23.9%) or at home (46.5%). Over all groups the greatest amount of drinking is done in private homes - either at friends or own; this accounts for 51% of the total sample. Of those who drink at home 89.2% drink weekly as do 85% of those who drink in hotels. There is an association between where people drink and how often they drink - the $X^2$ is significant at the .00001 level, the tau-b score is a moderate 0.38, the values of the uncertainty coefficients are - with last drink dependent 0.455, with place of drinking dependent 0.28. The significance of these results is affected by the large number of respondents in the weekly drinking category (71%).

Fifty-three percent of those who drank consumed less than 2 g of alcohol. Those who drink at hotels and restaurants tend to drink more than those who drink at home. Of those who drank at home, 40.5% drank less than 10 g, whereas 15% of those who drink in hotels drink less than 10 g and 35.7% drink over 20 g. At clubs and restaurants 66.6% drink over 20 g. It seems that more alcohol is actually consumed in potential drink and driving situations than at home.

There is a significant association between when a person last drank and the amount drunk ($X^2$ significant at 0.00001, tau-c - 0.3, uncertainty coefficient (sym) 0.30). These figures are influenced by the large number of weekly drinkers - 60.6% of whom drank less than 20 g of alcohol. Those who drank weekly or fortnightly constitute most of those who drank 40 g of alcohol or over.

If only those who were in a situation to drink and drive, i. e. not teetotallers or those who drink at home, are considered (Table VI), at higher levels (30 g+), there is proportionately more driving than not. With the exception of the category 60. 1-80 g g of alcohol consumed, the drinker is more likely to drive home than not (tau-c 0. 33, $X^2$ sig. at 0. 001, uncertainty coefficient (sym) 0. 13).

TABLE VI: Amount of Alcohol Drunk and Number who Drive.

| | Grams of Alcohol | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1-10 | 10. 1-20 | 20. 1-30 | 30. 1-40 | 40. 1-60 | 60. 1-80 | 80. 1-100 |
| Not in drinking and driving situation | 15 | 15 | 2 | 1 | 2 | 3 | 0 |
| Drank and drove | 3 | 11 | 4 | 4 | 4 | 0 | 3 |
| Did not drink and drive | 4 | 5 | 6 | 1 | 0 | 2 | 1 |

Knowledge

The study was not aimed at assessing the knowledge that people had on drinking and driving, but several of the statements were designed to assess the strength of 'popular views', e. g. that alcohol effects people differently, or one drink does not affect driving ability. A total of 79% of the sample agree that people should not drink and drive (53% on 1). Sixty-one percent felt that one drink did not affect driving ability (31% on 1, 10% on 2). Nineteen percent (a comparatively high percentage) were neutral as to whether one drink affected driving ability, 84. 2% of these strongly agreeing that people should not drink and drive.

TABLE VII: Crosstabulation of One Drink Affecting Driving Ability by Should Not Drink and Drive (%).

| One drink no effect | Should not drink and drive | | | | |
|---|---|---|---|---|---|
| | Strongly agree | | | Strongly disagree | |
| Strongly agree | 25 | 13 | 16 | 5 | 6 |
| | 9 | 1 | 1 | 1 | 2 |
| | 3 | 2 | 2 | 2 | 1 |
| | 4 | 2 | 0 | 2 | 1 |
| Strongly disagree | 0 | 2 | 0 | 0 | 0 |

There were no statistically significant figures but as can be seen from the table, 48% feel that one drink does not affect driving ability but agree with the blanket statement that people should not drink and drive.

A large part of the sample - 67% - agreed that alcohol affected people differently (28% on 1, 21.4% on 2); 24% disagreed with the statement. Twenty-two percent of the sample strongly agreed that one drink did not affect driving ability and that it affected people differently. Forty-three percent of the sample did not know the legal blood-alcohol limit, 51% knew the correct level, and the other 6% estimated incorrectly.

Respondents were asked to estimate the amount of alcohol in spirits and in beer it would take to attain the legal limit. Estimates reached as high as 67 g for beer and 99 g for spirits; only 48% (beer) and 42% (spirits) of respondents attempted to answer this question. There is a tendency for spirit levels to be lower than beer levels - the two levels are associated though ($X^2$ sign. at 0.01, tau-c 0.38). Although not directly asked if insurance policies on cars were valid if the driver had been over the legal limit, most people's comments on questions concerning insurance validity and fault indicated that they thought that insurance policies were valid but this is not so as drinking and driving generally invalidates insurance policies.

## Alcohol and the Drinking Driver

Two similar questions were asked in the questionnaire:

1. There should be no difference between the penalties for a driving offence when the driver is drunk and when he is sober. (Q. 8)
2. A person whose only driving offence is being over the legal limit while driving should not be fined. (Q. 12)

Seventy-one percent felt that the person who had not committed an offence, but was over the legal limit, should be fined. Eighty percent felt that there should be a difference between penalties for drunk and sober drivers.

TABLE VIII: Crosstabulation of Difference Between Penalties and Fining if Drunk (%).

| No fine if only drunk | No difference between penalties | | | | |
|---|---|---|---|---|---|
| | Strongly agree | | | | Strongly disagree |
| Strongly agree | 3 | 1 | 0 | 0 | 9 |
| | 2 | 0 | 0 | 2 | 5 |
| | 2 | 0 | 0 | 1 | 3 |
| | 1 | 0 | 0 | 3 | 8 |
| Strongly disagree | 6 | 2 | 3 | 8 | 10 |

Although there are no statistically significant figures, 40% of the sample strongly disagreed with both statements, a further 16% strongly disagreed with one of the statements, and moderately agreed with the other. Only 4% disagreed with both statements. Thirteen percent felt there should be no fine if the driver was merely drunk but 66% of those felt that if he was drunk and was picked up then the drinking factor should be taken into account.

Thirty-eight percent of respondents though that the drinking driver may be a potential alcoholic; 23% strongly and 25% moderately disagreed with the statement. However 59% said that the alcoholic should have counselling.

TABLE IX: Crosstabulation of Driver being Alcoholic and Need for Counselling. (%).

| Potential alcoholic | Counselling | | | | |
|---|---|---|---|---|---|
| | Strongly agree | | | | Strongly disagree |
| Strongly agree | 1 | 3 | 0 | 0 | 0 |
| | 11 | 6 | 1 | 1 | 1 |
| | 8 | 1 | 3 | 2 | 0 |
| | 7 | 3 | 2 | 4 | 9 |
| Strongly disagree | 3 | 2 | 4 | 2 | 12 |

A crosstabulation of these two variables revealed a Chi-square with a significance level of 0.0001, a moderately high tau-b of 0.49, indicating a moderate degree of association. The value of the symmetric uncertainty coefficient was 0.19. With the exception of three cases, those who think he is alcoholic, all recommend counselling; 32% of those who feel a drinking driver is not an alcoholic still feel he should have some counselling.

Opinions as to whether the drinking driver is alcoholic or not or requires counselling were crosstabulated with respondents' drinking behaviour; how often and how much they drank.

Of the drinkers who drink weekly, only 12.7% strongly felt that a drinking driver may be alcoholic. Because of the small number of drinkers in other categories it is not valid to assume conclusions. There is a significant association between when a person last drank and whether they recommend counselling. The least support for

counselling comes from those who drink weekly, only 53.5% of them supporting counselling. The other groups had 70% to 93.3% strongly supporting counselling.

The attitudes towards counselling and whether the drinking driver is a potential alcoholic or not are similar when the amount of alcohol consumed on the last drinking occasion is considered. There is no significant association between the amount drunk and the potential alcoholism of the drinking driver, but the heavier drinkers in categories 5 and 6 (40.1-80 g) have larger proportions (83.4% and 80%) disagreeing with the statement that the drinking driver is a potential alcoholic than the other categories who range from 50% to 59% disagreeing with the statement.

Those who do not drink were spread through from strongly agreeing to moderately disagreeing. When the amount drunk and counselling recommendations are compared there is a moderate degree of association, tau-c of 0.33, indicating that those who drink less are more likely to recommend counselling than those who drink larger amounts. With the exceptions of two cases in category 7 (80.1 to 100 g) no one who drank more than 30 g of alcohol on their last drinking occasion strongly recommended counselling; 19% moderately recommended it. Of those who drank under 10 g or not at all, 80.4% recommended counselling.

Although only 33% of respondents thought that the drinking driver had a poor traffic record, 69% strongly advocated his attendance at a defensive driving course; these people were spread through all categories concerning the drivers' traffic record. This is not all those who thought the drinking driver had a poor traffic record recommended a defensive driving course.

Punishment

Respondents were asked to indicate on which offence they thought that imprisonment, fining and disqualification was suitable; whether they agreed with proportional fining and confiscation of the offender's car if he is disqualified.

Eighty-four percent of those surveyed felt fining to be suitable on the first offence, 90% thought that fining was not suitable but felt that disqualification was suitable on the first and second offences. Neither age nor family structure of the respondent influenced which offence he thought a person should be fined. Forty-six percent of the respondents felt disqualification to be suitable on the first offence and a further 39% on the second offence. No one thought that it was not suitable. Although there is a significant Chi-square value at the 0.04 level for family structure and disqualification, no other statistic is significant.

Thirty-nine percent of the sample favour both fining and disqualification on the first offence. Thirty-three percent favour fining on the first and disqualification on the second offence.

Seventy-two percent of the sample favoured imprisonment on the second (35%) or third (37%) offence; 14% of respondents felt that imprisonment was not suitable, 21.4% of these also felt that fining was not suitable.

Of those who favoured imprisonment on the second offence (35%), 45.7% favoured disqualification on the first, 42.9% on the second offence. Of those favouring imprisonment on the third offence, 45.9% favoured disqualification on the first and 43.2% on the second offence.

Those flatting or living alone were the least likely to recommend imprisonment on the second offence; flatting 8.3%, alone, 25% -

compared with those married with or without children or living with parents of whom 40% to 54% respectively recommended imprisonment on the second offence. The association between family structure and imprisonment is not statistically significant (tau-b = 0.17). Those flatting or living alone were also the most likely to think that imprisonment was not suitable (35.7% and 21.4% respectively).

There is stronger support for imprisonment in the middle age level groups (24 years to 64 years) on the first and second offences. Those in the age groups 16-23 and 65+ show more support for imprisonment after the third offence; again these figures are not statistically significant.

While 84% of the sample favoured fining on the first offence, 41% felt that the fine should not be related to the offender's income, 41% felt that it should. There is no statistically significant association between a person's age or socio-economic group and whether they agree or disagree with proportional fining. The age group showing strongest support for proportional fining is the 24 to 29 year age group, of whom 64.3% support fining.

Sixty-three percent of those surveyed did not favour confiscation of the offender's car on disqualification. There was no statistically significant association with type of family structure and attitude to disqualification, but those who lived with their spouse and children or with parents, had a greater proportion of responses against than other categories.

## Deterrents

### a) Monetary

Several suggestions were made to increase the monetary liability of having an accident after drinking - responsibility for medical

expenses, insurance policies being invalid if the driver was over the legal limit.

The majority (70%) of those surveyed agreed with the suggestion that the driver should pay his medical expenses. There is more support for paying medical expenses than for proportional fines, a suggestion which is supported by only 41%.

TABLE X: Crosstabulation of Medical Expenses by Proportional Fines (%).

| Fines proportional | Should pay medical expenses | | | | |
|---|---|---|---|---|---|
| | Strongly agree | | | | Strongly disagree |
| Strongly agree | 1 | 1 | 0 | 0 | 0 |
| | 20 | 5 | 1 | 2 | 4 |
| | 2 | 5 | 0 | 2 | 1 |
| | 5 | 2 | 4 | 1 | 1 |
| Strongly disagree | 16 | 6 | 5 | 2 | 7 |

Those who strongly agreed with medical expenses were distributed fairly evenly as to whether fines should be proportional or not. But of those who strongly agree with proportional fines, 64.5% support medical expenses; 7% of the total sample strongly disagreed with both suggestions. All occupation groups have similar distribution patterns - the largest proportion of responses agreeing with the driver paying medical expenses. The size of the proportions range from 28.6% to 66.7%.

The concept of fault is an important factor in whether people considered that insurance policies should be valid if the driver was over the legal limit. Fifty-five percent of respondents felt that when the driver was not at fault the insurance should be valid; 29% thought that it should not be. But when the driver was at fault only 26% thought that it should be valid and 61% that if should not be valid. The $X^2$

of the crosstabulation of these two variables is significant at the 0.00001 level with a high contengency coefficient of 0.67, indicating a high degree of association. Sixteen percent of all respondents felt the insurance should be valid and 15% that it should not be valid whether the driver was at fault or not.

Those who felt that it should be valid if not at fault and invalid if at fault amounted to 20% of the sample.

b) Decreasing Blood-Alcohol Level and Increasing Surveillance

The respondents were asked whether they thought a decrease in the blood-alcohol level would discourage people from drinking and driving. Forty-four percent thought that it would be effective (21% on 9). There was no statistically significant association with how effective they thought a decrease in the legal blood-alcohol limit would be and whether they felt the present legal limit (100 mg/100 ml) should be lowered. But there are some interesting results; 48% of respondents felt that there should be no change in the blood-alcohol level but 34.4% of these felt a decrease would discourage people from drinking and driving. Of the 45% who advocated lowering the limit, 57.7% felt it would be effective in discouraging drinking and driving, 31% that it would not.

TABLE XI: Crosstabulation of Effect of Increasing Traffic Officers and Decreasing Blood-Alcohol Level (%).

| Discourage drinking and driving | Increasing number of traffic officers | | | | |
|---|---|---|---|---|---|
| | Strongly agree | | | | Strongly disagree |
| Strongly agree | 5 | 1 | 5 | 2 | 13 |
| | 2 | 3 | 0 | 6 | 7 |
| | 2 | 1 | 3 | 3 | 3 |
| | 6 | 2 | 1 | 3 | 5 |
| Strongly disagree | 9 | 3 | 0 | 3 | 11 |

A crosstabulation of the effectiveness of a change in the legal limit and increased surveillance showed that 39% strongly agreed and 17% moderately agreed that an increase in the number of traffic officers would not reduce the problem. The distribution of the effectiveness of a decrease in the blood-alcohol level is uniform for all categories of effectiveness of increase in the number of traffic officers, with a greater proportion (56%) feeling it would not be effective to increase the number of traffic officers. But there is no statistically significant association.

c) Breath-testing

Slightly more people are in favour of random breath-testing (62%), than are in favour of breath-testing in car parks (53%). There is a significant association between the two with a Chi-square value significant at the 0.0005 level, a contingency coefficient of 0.57 and an uncertainty coefficient of 0.20. Twenty-eight percent of the total sample strongly support testing in both situation; 8% are strongly against testing in both situations. A little under a third (25.58%) of those who feel there should be testing in car parks do not support random testing. Twenty-nine percent who support random testing do not support testing in hotel car parks.

Although there are no statistically significant statistics, those who have drunk more recently when compared to other categories, are proportionately less in disagreeing with random testing. Those who drank weekly or fortnightly did not agree as strongly with random testing as those who drank less regularly. However small numbers in the other categories make interpretation dubious.

There is an association between driving home last time the respondent drank (30% of the sample) and whether they thought testing should be random ($X^2$ significant at 0.07).

TABLE XII: Crosstabulation of Driving Behaviour on Last Drinking Occasions and Agreement with Random Testing (%).

| | Random testing | | | | |
|---|---|---|---|---|---|
| | Strongly agree | | | | Strongly disagree |
| Not in drink and driving situation. | 26 | 6 | 9 | 3 | 6 |
| Drove home. | 12 | 5 | 0 | 2 | 11 |
| Did not drive home. | 8 | 5 | 2 | 2 | 3 |

Those who drove home on their test drinking occasion had the highest proportion (36.7%) against random testing. Of those who were in a situation where they could have driven home but did not, a greater proportion are in favour of random testing on levels one and two than those who drove home.

Thirty-three to 40% of those who drink at pubs, parties, homes and clubs are in favour of random testing; most of those against testing in car parks are those who drink in their own homes (42.9%) and hotels (42.9%).

## Responsibility

In the pilot study 95% of respondents assigned full responsibility to the driver for drinking and driving. This affected the amount of responsibility the respondents assigned to other areas - hotels, friends and society. In the final questionnaire the question concerning driver responsibility was omitted. This resulted in the respondent assigning different levels of responsibility to the three remaining areas.

TABLE XIII: Frequency Table of Levels of Responsibility (%).

| | Responsible | | | Neutral | | | Not responsible | | |
|---|---|---|---|---|---|---|---|---|---|
| Society | 43 | 18 | 18 | 2 | 8 | 0 | 7 | 0 | 4 |
| Those who serve alcohol | 13 | 8 | 10 | 7 | 13 | 2 | 7 | 9 | 31 |
| Friends | 31 | 13 | 13 | 9 | 12 | 1 | 9 | 3 | 9 |

Society was considered to have a great deal of responsibility for the problem. Forty-three percent of respondents felt that society was responsible to a high degree, only 11% felt that it had no responsibility at all. Those who serve in hotels etc. were felt to be responsible to an extent by 38% of respondents. Thirty-one percent of respondents felt that they had no responsibility for the problem. Those who drink in pubs show no difference from others in their assigning of responsibility to those who serve alcohol. Friends were considered responsible to a large degree by 31% and to a lesser extent by 35% of the sample. Twenty-two percent felt they were not responsible.

There is no significant association between responsibility assigned to society and that assigned to those who serve alcohol; greater blame is placed on society than on those who serve alcohol. Of the 61% who attributed strong responsibility to society, 41% assigned no responsibility scores for those serving alcohol. Those who assigned strong responsibility scores for those serving alcohol have high responsibility scores for society - 89.97%. These relationships are shown by the lambda value with alcohol serves as the dependent being higher than the lambda value with society as the dependent variable (0.26 vs 0.00).

The $X^2$ of a crosstabulation of responsibility of society and education is significant at the 0.07 level. Thirty-five percent thought that society was responsible and education was necessary; 12% of

respondents felt that while society was responsible, education was not going to reduce the problem.

Sixty percent of respondents agreed that education was necessary to change people's attitudes. These people were 77% of those who felt previous educational programmes had had long term effects. Only 53% thought that educational programmes had been effective in the short-term and 39% even less effective, which means that although people will recommend education, they do not believe that previous educational programmes have been very successful. Fifty-seven percent of those who felt that education was necessary felt that the effect of previous programmes had been short-term; 34.7% felt that it had been even less.

The person other than the driver who was the most immediate 'control' over drinking and driving is the passenger. Respondents were asked to indicate whether they thought that passengers in the car of the drinking driver should be liable for prosecution. Fifty-six percent thought that they should not be, 31% felt they should be, 66% of these strongly so. But 66% of all respondents felt that the friends did hold responsibility for the problem; 51.6% of these, a large degree of responsibility. So while friends are considered responsible to a large extent for the problem, they are not considered legally responsible. Of those who strongly consider society responsity, 45.5% feel passengers should not be prosecuted. Of those who favour prosecution, 64.7% felt that friends had a degree of responsibility for the problem.

The other area of responsibility looked at was whether people felt that if the driver was given the opportunity of finding out his blood-alcohol level, would he be less likely to drive, on finding out he was over the legal limit. Twenty-four percent (on 9) strongly agreed that he

would be less likely to drive, 38% agreed to a lesser extent, and 12% strongly disagreed.

# DISCUSSION

The sample in the survey is similar in structure to that of the recent larger survey carried out over most of New Zealand by the National Research Bureau on behalf of ALAC and to the population structure of the 1976 census figures.

The majority of the sample drank and as McCreary (1973) found, those who drank more tended to drink away from home. Only 30% of this sample drank and drove on their last drinking occasion - slightly lower than the 39% found in research on drinking and driving by 15-24 year olds in 1976 (Heylen Research).

## Alcohol and Driving

Beliefs commonly purported to be held by the public are that 'one drink does not affect driving ability' and 'alcohol affects people differently' (e.g. Elliott and Street 1968). In this survey 61% felt that one drink did not affect driving ability. In a study by Sheppard in England on 2,835 people in 1967, 66% felt this way. Just under half the sample agreed with the blanket statement that people should not drink and drive but felt that one drink does not affect driving ability. This is possibly a reflection of earlier campaigns against drinking and driving which have concentrated on the message of 'Don't drink and drive'. A large proportion (67%) agree that alcohol affects people and their driving ability differently. A similar proportion (68%) in Sheppard's study agreed that experts did not agree on the effects of drinking on driving.

It seems then, that while those surveyed agree that drinking and driving should not be mixed, they do accept drinking alcohol prior to

driving to a degree in that one drink does not affect driving ability and it has differential effects.

The Drinking Driver

Most of those who feel that the drinking driver may have a problem recommend counselling. A little under a quarter of respondents feel that the driver does not have a problem and does not require counselling. A third of those who feel that the driver is not a potential alcoholic still feel that he should have counselling. The percentage who feel that the driver may have problems with alcohol is quite high; the actual expected percentage of drivers involved in drinking and driving accidents who have been calculated as being likely to have problems with alcohol is around 50% (Waller 1968, Gabrynowicz 1977, Selzer and Weiss 1966). The high proportion indicates that they feel that the drinking driver is not the average social drinker who has had one too many. Those who drink regularly are less likely to consider a drinking driver to be a potential alcoholic and to recommend counselling than those who drink less regularly.

Besides recommending counselling, 69% recommended that the driver attend a defensive driving course although only 33% of the sample agree that the drinking driver has a poor traffic record. This does not concur with research findings which indicate that the drinking driver does have a poor traffic record (Grimmond 1971, Raymond 1971, Kreml 1971, Whitlock et al. 1971). Also the defensive driving course does not cover the problem of drinking and driving and has been found to be effective in reducing conviction rates but not the accident rates of those who attend (Hill 1976).

Those surveyed indicated that they felt that the drinking driver needed some form of help to avoid recurrence of the problem and this

help was not necessarily punitive in nature, but potentially constructive.

Court Penalties for Drinking and Driving

In considering the drinking driver and his offence, the majority of those surveyed (59%) felt that intoxication should either be considered an offence by itself or additional to the driver's traffic offence so the alcohol factor is considered to be important.

The pattern of attitudes towards traditional penalties is a preference for fining on the first offence, disqualification on the first or second offence and imprisonment on the second or third offence. Disqualification was considered to be a suitable penalty by all respondents - it is one which is obviously related to the offence, even if its effectiveness is questionable.

Imprisonment was the least popular. Fourteen percent felt it not suitable; as imprisonment can result in severe disruption of family life, it is surprising that the greatest support for imprisonment for the second offence comes from those within a family structure. Attitudes towards fining, disqualification or imprisonment are not influenced by either age or family structure.

There is definitely less support for increasing the severity of the above penalties with the introduction of proportional fines related to income as occurs in Sweden. This suggestion was supported by 41% of the sample. Confiscation of the offender's car was supported by an even smaller percentage. Those living in a family situation - either with a spouse and children or with parents and siblings showed the least support for confiscation, possibly because in these situations the confiscation of the offender's car would have more repercussions.

While traditional court penalties are supported, there is less support for increasing the scope of the penalties.

Deterrents

Merely having been in the situation where alcohol is consumed, for example at an hotel, is considered adequate enough for breath-testing to occur by 53% of the people sampled. Total random testing on the road is favoured by 62% of the people surveyed.

Other ways to deter people from drinking and driving suggested were, to decrease the legal blood-alcohol level; 57% of those who advocated lowering the legal limit thought that it would be effective. Only 44% of the total sample felt that the lowering of the limit would effect a reduction in the occurrence of drinking and driving. Only 34% thought that an increase in the number of traffic officers would result in a decrease of drinking and driving.

While there was support for increasing the powers of the legislation by changing the limit and extending the breath-testing situation, it is not felt that increasing the chances of being caught drinking and driving would result in a decrease of drinking and driving.

Most people thought that there would have to be education before people stopped drinking and driving. This ties in with the amount of responsibility assigned to society to the problem. But again, although people recommend educational programmes, this does not mean that they think it will be particularly effective. Most felt that previous educational programmes had not been effective in the short-term; in many cases not even as long as that.

People seem willing for the drinking driver to pay for his offence in more relevant ways than fining. Seventy percent supported the

suggestion that the driver should pay his medical expenses. However it is debatable as to how much people thought medical expenses would be and how much the drinking driver should pay in serious injury cases.

The second area where the drinking driver is penalised economically is the validity of the insurance policy. If the driver is over the legal limit, it is written into insurance policies in one form or another that the policy is not valid in such cases, a fact that many people in the survey did not seem to be aware of. This came up as incidental comment to the statements on insurance policies. While there was general support for policies not being valid if the driver had been drinking, there is a tendency towards leniency in that if the driver not at fault then there is less support for insurance policies being invalid. This ties in with Pliner and Cappell's (1978) finding that there is less attribution of responsibility if there are any grounds for justification for the accident. One point that needs to be clarified is whether respondents were thinking of being legally at fault of whether they were thinking of the insurance companies' decisions.

There is more support for the driver paying medical costs resulting from his accident than for him to pay insurance costs. People felt that if you have paid your policy then you should expect full coverage. This logic did not extend to the payment of taxes for the health services!

People seem to feel that the problem of drinking and driving cannot be solved through more stringent legislation and enforcement of this legislation, but needs to come through education before there is to be any long-term result. In the meantime they feel that the driver should be responsible for the problem at least to the extent of paying his own medical bills and car bills - especially the latter - when he is

at fault. The popularity of this monetary deterrent is difficult to tie in with the lack of support for proportional fining unless one considers that medical and car bills may be more closely related to the severity of the accident and a more pertinent punishment.

Responsibility

The greatest amount of responsibility for the problem lies of course with the individual drivers. The majority of people agreed that if the drinking driver was able to take a breath-test and found that he was over the legal limit, he would be less likely to drive. When considering Williams' (1978) study, this seems to be putting undue faith in the driver. In Williams' study of fifteen people leaving drinking settings over the legal limit, eight intended to drive and only one took up the offer of a free cab.

While people feel that friends of the driver do have a degree of responsibility for the problem, they do not feel that they should be liable to any form of prosecution if they are in the car of a friend who is convicted of drinking and driving.

It was felt by those surveyed, that people who serve alcohol bear very little responsibility for the drinker-driver when compared to friends and society. Society was considered to have the greatest degree of responsibility for drinking and driving. This ties in with the need seen for education to reduce the problem.

The source of the problem of drinking and driving is seen as society which somehow condones the practice, and the individual driver who carries out the act. Others involved in the drinking situation - bartenders and friends - are not considered to hold much responsibility for the problem.

## Conclusions

There is an acceptance of drinking an amount of alcohol and driving. It is felt, however, that the drinking driver who is apprehended is not a normal social drinker but one in need of some form of professional help with his drinking. Generally financial penalties in the form of fining, medical expenses and, in certain instances, insurance costs, are favoured. Imprisonment is not felt to be suitable until the second or third offence. While people are willing to accept more stringent legislation, it is felt that the problem of drinking and driving is a problem of society and that it will be education and not more stringent legislation which will effect a reduction in the incidence of drinking and driving.

## Criticisms and Suggestions

This survey was aimed at assessing people's views on a wide range of statements concerning drinking and driving. The size of the sample precludes any definitive conclusions being drawn from the results. It does, however, suggest areas which should be considered in greater depth.

In the area of common beliefs respondents could be asked about the factors which would include: advertising campaigns, newspaper articles, their own personal experience. The respondents could be directly asked if the previous anti-drinking and driving campaigns had affected their own drinking and driving behaviour and if so in what ways and for how long. Several statements used in the questionnaire could be expanded to clarify the extent of the respondents' agreement with the statement. The statement concerning financial responsibility for hospitalisation needs to be expanded to assess the extent to which

people feel the drinking driver should be responsible for medical expenses.

The statements on the suitability of penalties could be altered to assess how effective penalties are felt to be and how long imprisonment and disqualification sentences should be, and how high fines should be, in order to have some impact.

The statements concerning the drinking driver could be of greater scope - who the respondent feels the drinking driver is in terms of age, socio-economic status and race.

The statements concerning alcoholism and the drinking driver could be rephrased to find out the percentage of drivers the respondent feels are alcoholic rather than the blanket statement asking for agreement on whether the drinking driver is a potential alcoholic.

# APPENDIX I

## PILOT QUESTIONNAIRE

1. A person convicted of drunken driving is a potential alcoholic if not already an alcoholic.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

2. People should not drink alcohol and drive.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

3. One drink does not affect driving ability.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

4. Alcohol affects different people differently; so that one person could drink more than another but would be a more capable driver.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

5. Drinking and driving increases the chances of having an accident.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

6. Drinking and driving increases the severity of an accident.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

7. A driver with a record of traffic offences is more likely to be a drunken driver than a driver who does not have a traffic record.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

8. A person convicted of drunken driving has a drinking problem and should be required to attend a form of counselling dealing with alcoholism.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

9. There should be no difference between the penalties for a driving offence when the driver is drunk and when he is sober.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

10. Imprisonment is a suitable penalty on the:

5th 4th 3rd 2nd 1st not suitable

offence.

11. A person convicted of drunken driving should have his licence disqualified on the:

5th 4th 3rd 2nd 1st should not be disqualified

offence.

12. If the person convicted of drunken driving owns a car and he is disqualified, the car should be confiscated for the period of the disqualification.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

13. A person whose only driving offence is being drunk while driving should not be fined.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

14. Fining is a suitable penalty for a drunken driving offence.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

15. Fines should be proportional to income.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

16. An increase in the number of traffic officers would not reduce the incidence of drunken driving and accidents.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

17. What is the present legal blood-alcohol level? _____mg/ml

To attain the legal limit how much alcohol would you have to consume?

_____ beer

_____ spirits

The legal blood-alcohol level should be:

| raised | | | | no change | | | | lowered |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

18. If drinkers were able to use a breathalyzer when they were leaving the hotel and found that they were over the legal limit they would be less likely to drive.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

19. Random breath-testing of drivers in hotel car parks should not be legalised.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

20. Traffic officers should be able to stop and breath-test drivers whom they think may be over the legal limit but who have not committed a driving offence such as speeding.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

21. Only when people are educated on the results of drinking and driving will people stop drinking and driving.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

22. Previous educational programmes on drinking and driving have been effective in the:

| long term | | | | short term | | | | not at all |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

23. Insurance policies should not be valid when the driver in an accident is drunk and not at fault.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

24. Insurance policies should be valid when the driver in an accident is drunk and at fault.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

25. A person with a drunken driving record should attend a defensive driving course.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

What is a defensive driving course?

_____

_____

_____

26. The drunken driver should be expected to pay for medical care for any injuries he receives as a result of his driving while drunk.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

27. The responsibility for drunken driving lies with the individual driver.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

28. The responsibility for drunken driving lies with society and the attitudes which it holds towards alcohol and drinking.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

29. Those who serve alcohol - pubs, licensed restaurants, hosts at parties, are responsible for drunken drivers.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

30. The responsibility for the drunken driver lies with his friends who allow him/her to drive.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

31. Passengers in the car of a drunken driver should not be liable for prosecution.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

PART B

square no _____

Age _____

M F

Occupation _____

Vehicle ownership: car

motor-bike

Family structure:

Drinking behaviour:

On what occasion did you last drink? When was this?

_____

Where did you drink?

_____

What did you drink?

_____

About how much would you have drunk?

_____

Have you participated in any other survey recently dealing with drinking and driving?

_____

Others present during interview

Age _____

Sex: M F

Relationship to respondent

Interruptions.

# APPENDIX II

## ATTITUDES TOWARDS DRINKING AND DRIVING

This questionnaire consists of a series of statements concerning drinking and driving. We would like you to give your opinion on the statement, that is, how strongly you agree or disagree with the statement. There is plenty of room for you to agree or disagree with each statement. Please read all the statements carefully as some are positively worded and others negatively worded.

---

1. A person convicted of drunken driving is a potential alcohol if not already an alcoholic.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

2. People should not drink alcohol and drive.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

3. One drink does not affect driving ability.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

4. Alcohol affects people differently; so that one person could drink more than another but would be a more capable driver.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

5. Drinking and driving affects the severity of an accident.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

6. A driver with a record of traffic offences is more likely to be a drunken driver than a driver who does not have a traffic record.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

7. A person convicted of drunken driving has a drinking problem and should be required to attend a form of counselling dealing with alcoholism.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

8. There should be no difference between the penalties for a driving offence when the driver is drunk and when he is sober.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

9. Imprisonment is a suitable penalty on the

1st 2nd 3rd 4th 5th not suitable offence.

10. Fining is a suitable penalty on the

1st 2nd 3rd 4th 5th not suitable offence.

11. Disqualification of driver's licence is a suitable penalty on the

1st 2nd 3rd 4th 5th not suitable offence.

12. A person whose only driving offence is being over the legal blood-alcohol limit while driving should not be fined.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

13. Fines should be proportional to income - a person earning $100 a week should be fined $25. If however he had been earning $300 a week the fine would have been $75.

strongly agree — neutral — strongly disagree

1 2 3 4 5 6 7 8 9

14. If the person convicted of drunken driving owns a car and he has his licence disqualified, the car should be confiscated for the period of disqualification.

strongly agree — neutral — strongly disagree

1 2 3 4 5 6 7 8 9

15. An increase in the number of traffic officers would not reduce the incidence of drinking and driving.

strongly agree — neutral — strongly disagree

1 2 3 4 5 6 7 8 9

16. What is the present legal blood-alcohol level? _____ mg/ml.

To attain the legal limit how much alcohol would you have to consume?

_____ beer

_____ spirits

The legal blood-alcohol limit should be

raised — no change — lowered

1 2 3 4 5 6 7 8 9

17. A decrease in the legal blood-alcohol limit would discourage people from drinking and driving.

strongly agree — neutral — strongly disagree

1 2 3 4 5 6 7 8 9

18. If drinkers were able to use a breathalyzer when they were leaving the hotel and found that they were over the legal limit they would be less likely to drive.

strongly agree — neutral — strongly disagree

1 2 3 4 5 6 7 8 9

19. Random breath-testing of drivers in hotel car parks should not be legalised.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

20. Traffic officers should be able to stop and breath-test drivers whom they think may be over the legal limit but who have not committed a driving offence such as speeding.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

21. Only when people are educated on the results of drinking and driving will people stop drinking and driving.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

22. Previous educational programmes on drinking and driving have been effective in the:

| long term | | | | short term | | | | not at all |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

23. Insurance policies should be valid when the driver in an accident is drunk and not at fault.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

24. Insurance policies should be valid when the driver in an accident is drunk and at fault.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

25. A person with a drunken driving record should attend a defensive driving course.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

What is a defensive driving course?

_____

_____

_____

26. The drunken driver should be expected to pay for medical care for any injuries he receives as a result of his drinking and driving.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

27. Passengers in the car of a drunken driver should not be liable for prosecution.

| strongly agree | | | | neutral | | | | strongly disagree |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Statements 28 to 30 concern the responsibility for drinking and driving. The numbers 1 to 9 indicate the degree of responsibility you feel each holds. There is no limit to the amount of responsibility you assign - if you circle 1 for one of the statements it does not mean that you cannot assign responsibility to the others.

28. The responsibility lies with society and the attitude which it holds towards alcohol and drinking.

| responsible | | | | neutral | | | | not responsible |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

29. The responsibility lies with those who serve alcohol - pubs, clubs and restaurants.

| responsible | | | | neutral | | | | not responsible |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

30. The responsibility lies with the friends of the driver who allow him/her to drive.

| responsible | | | | neutral | | | not responsible | |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

PART B

square no _____

Age _____

Sex M F

Occupation _____

Vehicle ownership: car
motor-bike

Family structure:

Have you been involved in a motor accident in which alcohol may have played a part?

_____

_____

Drinking behaviour:

When did you last drink? _____

Where did you drink? _____

Was this a special occasion? _____

What did you drink? _____

About how much would you have drunk? _____

Did you have to drive home? _____

Have you participated in any other survey dealing with drinking and driving recently. YES NO

Others present during interview

Age _____

Sex M F

Relationship to respondent _____

Interruptions _____

# REFERENCES

A Communications Approach to the Drinking Driver Problem. Prepared for the Road Safety Council of S. Australia, 1974.

Allsop, R. E., Alcohol and Road Accidents. Ministry of Transport Road Research Laboratory (UK), 1966.

A Modern Epidemic. 1. What causes road accidents? Special Correspondent, Brit. Med. J., 2, 1272-1273, 1978.

A Modern Epidemic. 2. Drinking and driving accidents - does education help? Special Correspondent, Brit. Med. J., 2, 1352-1353, 1978.

Bailey, J. P. M. Alcohol and fatal road accidents. in Alcohol in the Blood of NZ Drivers. NZDSIR, Inform. Series, No. 101, Government Printer, Wellington, 1974.

Batt, R. D. and Couchman, K. G. Relationship between alcohol intake and blood alcohol levels. in Road Traffic Safety Res. Seminar, Wellington, 1976.

Biles, B. D. The range of alternatives in sentencing. Road Safety and the Law, Sydney, 1973, p. 84-87.

Borkenstein, R. F. Enforcement, adjudication and sanction. 6th Int. Conf. on Alcohol, Drugs and Traffic Safety, 1974. Toronto, ARF, 1975, 655-662.

Borkenstein, R. F. Drink and driving in other lands. Traffic Safety Chicago, 76(4), 20-22, 1976. in J. S. A. 39(2), No. 210.

Breath Tests in New Zealand, 1976. Ministry of Transport, 1977.

Breath Tests in New Zealand, 1977. Ministry of Transport, 1978.

Clayton, A.B., Booth, A.C. and McCarthy, P.E. A controlled study of the role of alcohol in fatal adult pedestrian accidents. TRRL Suppl. Rep. 332, Ministry of Transport Road Research Laboratory (UK), 1977.

Deming, R.R. Statutory diversion of drunkeness offenders. J. Crim. Justice, 5(1), 29-37, 1977.

Drinking and Driving. Dept. of the Env., London, 1976.

Drinking Drivers and the Law. Br. Med. J., 1: 1103-1104, 1976.

Drinking and Driving in the Province of Ontario. Rep. by the Inter-Ministerial Committee on Drinking and Driving, August, 1974.

Editorial. Some protecti ve measures in road traffic accidents. NZ Med. J., 79, 623-624, 1974.

Elley, W.B. and Irving, J.C. Revised socio-economic index for NZ. NZ J. Educ. Stud., 11, 25-36, 1976.

Elliott, D.W. and Street, H. Road Accidents. London, Allen Lane, The Penguin Press, 1968.

Erlank, J.E. Alcohol and Road Traffic Accidents. National Inst. for Rd. Research, Sth Africa, 1971.

Fairgray, R.A. Correspondence: Blood alcohol in motorists. NZ Med. J., 77 (No. 491), p. 268, 1973.

Fitzgerald, P.J. Review of criminal on the road. Law Qt. Rev., 82, 121-124, 1966.

Fox, B.H. The problem of countermeasures in drinking and driving. Traffic Quarterly, 19(3), 299-320, 1965.

Freedman, K., Henderson, M. and Wood, R. Drink-Driving Propaganda in Sydney, Australia. Traffic Accident Research Unit, NSW, No. 2, 1975.

Freeland, C.W. Road Safety Developments in Australia. Road Traffic Research Seminar, Wellington, 1976.

Gabrynowicz, J.W., Moore, A.W. and Van, B. Diagnosis of alcoholism among drunken drivers and their profile. Aust. J. of Alcoholism and Drug Dependence, 4(4), 122-124, 1977.

Grimmond, B.B. Human factors in Road Accidents, pp. 727-738. NZ Roading Symposium, 2, Victoria University of Wellington, 1971.

Grimmond, B.B. Suicide at the wheel. NZ Med. J., 80, 90-94, 1974.

Gwynne, J.F. Fatal road accidents in Otago. NZ Med. J., 85, (No. 581), 83-87, 1977.

Hart, D.N.J., Cotter, P.W., Macbeth, W.A.A.G. Christchurch traffic trauma survey: Part 1, blood alcohol analysis. NZ Med. J., 81 (No. 541), 503-507, 1975.

Hart, D.N.J., Cotter, P.W. and Macbeth, W.A.A.G. Christchurch traffic trauma survey: Part 2, Victims and statistics. NZ Med. J., 81, 543-546, 1975.

Havard, J.P.J. Cross-national comparison of drinking driving laws. 6th Int. Conf. on Alcohol, Drugs and Traffic Safety, 1974. Toronto, ARF, 1975, p 637-654.

Hays, W.L. Statistics for the Social Sciences. 2nd Edition. London, Rhinehart Winston, 1974.

Henderson, J.M. Measures to reduce the drink-driving problem. Road Safety and the Law, Sydney, 1973, 158-162.

Henderson, M. Drinking and Driving: Sociological Aspects. Paper presented at the National Road Safety Symposium, Canberra, 1972.

Hill, P. S. An evaluation of the defensive driving course in NZ. Road Traffic Safety Research Seminar, Wellington, 1976.

Hogg, R. A study of male motorists' attitudes to speed restrictions and their enforcement. TRRL Suppl. Rep. 276, Ministry of Transport, Road Research Laboratory (UK), 1977.

Hood, R. Sentencing the Motoring Offender. London, Heinemann, 1972.

Hooper, K. W. Drinking and driving down under. Traffic Safety Chicago, 76(2), 8-10. Abstract in Journal of Studies on Alcohol, 39(2), No. 173, 1978.

Hossack, D. and Brown, G. The hard facts of the influence of alcohol on serious road accident casualties. Med. J. Aust., 13(2), 473-478, 1974.

Hurst, P. M. Epidemiological aspects of alcohol in driver crashes and citations. J. of Traffic Safety Research, 5(3), 130-148, 1973.

Hurst, P. M. Blood test legislation in New Zealand. Traffic Res. Rep. No. 18, Ministry of Transport, 1977.

Hyman, M. M. The social characteristics of persons arrested for driving while intoxicated. J. Stud. of Alc., Suppl. No. 4, 138-177, 1968.

Institute for Road Safety Research. Influencing Road Users' Behaviour, Netherlands, SWOV, 1976.

Jamieson, J.G., Duggan, A.W., Tweddell, J., Pope, L.I. and Zvirbulis, V.E. Traffic crashes in Brisbane: an engineering, medical and sociological study. Special Report No. 2, Australian Road Research Board. Cited in Henderson, M. Drinking and Driving: Sociological Aspects. National Road Safety Symposium, Canberra, 1972.

Jenkins, D.G. International Drivers: Behaviour Research Association Cross-National Attitudes and Opinions Survey: Report of UK Findings. SR 403. Transport and Road Research Laboratory (UK), 1978.

Johnston, R. Alcohol and drugs in NZ. Road Traffic Safety Res. Seminar, Wellington, 1976.

Klecka, W.R., Nie, N.H. and Hadlai Hull, C. SPSS Primer Statistical Package for the Social Sciences Primer. Calif., McGraw-Hill, 1975.

Kreml, F.M. Traffic law enforcement: where do we go from here? Traffic Quarterly, 25(4), 499-503, 1971.

Ladd, R.R. The drinking driver - the problem stated. NZ Law Journal, 48, 328-329, 1972.

Ladd, R.R. The drinking driver - overseas situation and experience. NZ Law Journal, 48, 356-359, 1972.

Ladd, R.R. The drinking driver - New Zealand's legislation. NZ Law Journal, 48, 373-382, 1972.

Light, L.D. Letter to the Editor. NZ Med. J., 79, 625, 1974.

Little, A.D. The State of the Art of Traffic Safety. Praegar, New York, 1970.

Little, J.W. Some new departures in controlling drunk drivers. Traffic Quarterly, 25(1), 131-147, 1971.

McCreary, J.R. A Survey of Drinking Patterns of a Random Sample of the Population in Two Wellington Suburbs. Memorandum to: The Royal Commission on Liquor, 1973.

McDonald, I.R.C. The problem of the NZ drinking driver. in, Alcohol in the Blood of NZ Drivers, NZDSIR, Inform. Series No. 101, Government Printer, Wellington, 1974.

McDonald, R.C. and Stone, H.M. Intoxicants. Road Traffic and Safety Research Seminar, Wellington, 1976.

McGrant, J., O'Brien, J. and Liftik, J. Coercive treatment for alcoholic 'driving under the influence of liquor' offenders. Brit. J. of Addiction, 72(3), 223-230, 1977.

McKennell, A.C. Surveying Attitude Structures. Amsterdam, Elsevier, 1974.

Malfetti, J.L. and Simon, K.J. Evaluation of a program to rehabilitate drunken drivers. Traffic Quarterly, 28(1), 49-61, 1974.

Middendorff, W. Int. Crim. Police Review, No. 214, 1968. Cited in Grimmond, B.B. Human Factors in Road Accidents, NZ Roading Symposium, Vol. 2, Victoria University of Wellington, 1971, 727-738.

Ministry of Transport (Canada). Alcohol and Highway Safety. A Review in Quest of Remedies. Canada, Jacques-Cartier Inc., 1974.

Ministry of Transport (Canada). Alcohol and Highway Safety. A Review of the Literature and a Recommended Methodology. Canada, Jacques-Cartier Inc., 1974.

Ministry of Transport (NZ). 1974 Drinking-Driving Campaign. Traffic Research Circular, No. 10, 1975.

Mirochnick, S., The drinking driver and motor vehicle accidents in Alberta for the period 1961-1965. Traffic Quarterly, 21(2), 249-267, 1967.

Motor Accidents in New Zealand Statistical Statement, 1976. Ministry of Transport, N. Z.

New Zealand Official Yearbook 1976. 81st Annual Edition, Dept. of Statistics, Wellington, 1976.

Norwegen: die Knatschlange (queing up for jail in Norway), Fursurger, 44, 47-48, 1976. in J. Stud. Alc., 39(2), No. 212, 1978.

Older, S. J. and Sims, M. D. Blood Alcohol Levels in Road Accident Fatalities Occurring in Great Britain during December 1964 and January 1965. RRL Report 32, Ministry of Transport Road Research Laboratory (UK), 1966.

Oliver, J. S., Sloan, E., Smith, H. and Rodger, W. J., Alcohol and driving: a survey of prosecution and defence alcohol estimations. Med. Sci. Law, 15(3), 211-217, 1975.

Oppenheim, A. N. Questionnaire Design and Attitude Measurement. London, Heinemann, 1973.

Parsons, K. R. Attitudes Towards Drinking and Driving in NZ. Traffic Res. Rep. No. 10, Ministry of Transport, 1975.

Parsons, K. R. Violence on the Road. Research Series No. 6., Dept. of Justice, 1978.

Pieterse, S. H. Alcohol and Fatal Road Accidents in South Africa. National Institute for Road Research, Sth Africa, 1975.

Pliner, P. and Cappell, H. Drinking, driving, and the attribution of responsibility. J. Stud. Alc., 38(3), 593-602, 1977.

Pollak, S. Der alkoholisierte Fussgänger als Opfer tödlicher Strassen verkehrsunfalle. (The alcoholized pedestrian as victim of fatal road accidents.) Wien Klin. Wschr., 88, 206-209, 1976. In J. Stud. Alc., 39(2), No. 213, 1978.

Pope, J. Convicting the guilty. NZ Law Journal, 18, 425-426, 1974.

Poynter, A. G. and Anderson, M. The drinking driver: a blueprint for some further action. NZ Med. J., 83(No. 556), 47-50, 1976.

Raymond, A. Drivers Breathalyzed in Melbourne 1967: a Preliminary Report. Proceedings of 5th Conference, Australian Road Research Board, 1970.

Raymond, A.E. Characteristics of Breathalyzed Drivers. Nat. Road Safety Symposium, Canberra, 1972, 232-243.

Raymond, A. Alcohol in Relation to Road Safety. Australian Road Research Board, 2, 1974.

Robertson, J.S. Dimensions of the drink-driving problem. Road Safety and the Law, Sydney, 1973, 151-157.

Robinson, J.R. and Shaver, P.R. Measures of Social Psychological Attitudes Reviewed. Michigan, Survey Research Center, Institute for Social Research, 1973.

Ross, H.L. Swedish and British drink-driving laws. in 6th Int. Conference Alcohol, Drugs and Traffic Safety, 1974, Toronto, ARF, 1975, 663-678.

Ryan, G.A. and Salter, W.E. Blood Alcohol Levels and Drinking Behaviour of Road Crash Victims. Dept. of Soc. and Preventitive Medicine, Monash Univ., 1977.

Sabey, B.E. and Codling, P.J. Alcohol and road accidents in Great Britain. Proceedings of the 6th Int. Conf. on Alcohol, Drugs and Traffic Safety 1974, Toronto, ARF, 1975, 73-84.

Sabey, B.E. and Inst, P. Potential for accident and injury reduction in road accidents. Road Traffic Safety Research Seminar, Wellington, 1976.

Sanderson, J.E. The Alcohol Impaired Driver. Traffic Research Report No. 14, Ministry of Transport, 1975.

Scoles, P. and Fine, E.W. Short-term effects of an educational program for drinking drivers. J. Stud. Alc., 38(3), 633-636, 1977.

Scott, G.R. Drink and driving. NZ Med. J., 68, 360-364, 1968.

Selzer, M.L. and Weiss, S. Alcoholism and traffic fatalities: study in futility. Amer. J. Psychiat., 122, 762-767, 1966.

Shaw, M.E. and Wright, J.M. Scales for the Measurement of Attitudes. New York, McGraw-Hill, 1967.

Sheppard, D. The 1967 Drink and Driving Campaign: A Survey Among Drivers. RRL Report LR 230, Ministry of Transport Road Research Laboratory (UK), 1967.

Stanley, P. Correspondence: Drinking driver recidivism. NZ Med. J., 86, 41-42.

Storie, V.J. Male and Female Car Drivers. Differences observed in Accidents. RRL Report 761, Ministry of Transport Road Research Laboratory (UK), 1977.

Survey of Drinking and Driving Behaviour amongst 15-25 year olds. Prepared for MOT by: Heylen Research Centre, 1976.

Sutton, T. Correspondence: Drink/driving education. Aust. J. of Alcoholism and Drug Dependence, 4(4), 133, 1977.

Tennett, R.B. Death on the highway: an analysis of 100 road accidents in a rural area. NZ Med. J., 70, 159-161, 1969.

Tonge, J.I., O'Reilly, M.J.J., Davison, A. and Johnston, N.G. Traffic crash fatalities: injury patterns and other factors. Med. J. of Aust., 2, 5-1 , 1972.